

## EXHIBIT 1 – Engineering Buildout Methodology and Conclusions

<u>Call Sign:</u>	KNLH420
<u>Licensee:</u>	Powertel Knoxville Licenses, Inc.
<u>Market:</u>	Knoxville, TN – BTA232
<u>Frequency Block:</u>	E
<u>Adequate signal to MTA/BTA population:</u>	77%

This engineering exhibit demonstrates Powertel Knoxville Licenses, Inc.’s (the “Applicant” or “Powertel”) satisfaction of the five-year build-out requirement as provided in the Federal Communications Commission’s (“Commission”) Construction Requirement rules, 47 C.F.R. §24.203. As shown below, the Applicant has satisfied its five-year construction benchmark by providing an adequate signal to more than the requisite 25% of the BTA’s population.

### **A. Engineering Standards**

The license held by the Applicant is a 10 MHz license subject to Section 24.203(b) of the Commission’s rules, which requires licensees to “provide adequate service to at least one-quarter of the population in their licensed area within five years of being licensed.” For this exhibit, the Applicant utilized the following tools:

-SAFCO Technologies, Inc. Wizard® - from SAFCO Technologies, Inc. (a division of Agilent Technologies), Chicago, IL ([www.safco.com](http://www.safco.com)). This tool computes coverage contours for individual transmitters or a network of transmitters.

-MapInfo Professional V5.5 – Desktop mapping software, MapInfo Corporation, Troy, NY ([www.mapinform.com](http://www.mapinform.com))

### **B. Population Estimates**

The 1990 U.S. Census Bureau data has been utilized in accordance with Section 24.203(b). The Census Bureau utilizes “census tracts” to subdivide counties into statistical geographic references for population. Census tracts are defined as “. . . small, relatively permanent division[s] of a metropolitan statistical area (MSA) or selected non-metropolitan counties, delineated for presenting census data.” As the Commission’s Basic Trading Area (“BTA”) borders are the same as the census tracts, the census data is used in demonstrating covered population.

### **C. Results – Population Coverage**

The service area signal level coverage is overlaid upon the census tract data to arrive at a population coverage figure. Where the centroid of a particular census tract is contained within the coverage area, the population associated with that tract was included in the covered population calculation. In cases where the coverage overlaps the census track,

but the centroid of the census tract is not within the coverage area, the population of that census tract is excluded from the calculations.

Exhibit 2 contains a tabular representation of the census tract population, covered population, and percentage of the population covered. Exhibit 3 is a graphic depiction of the area depicting coverage with a received signal of -92 dBm or greater.

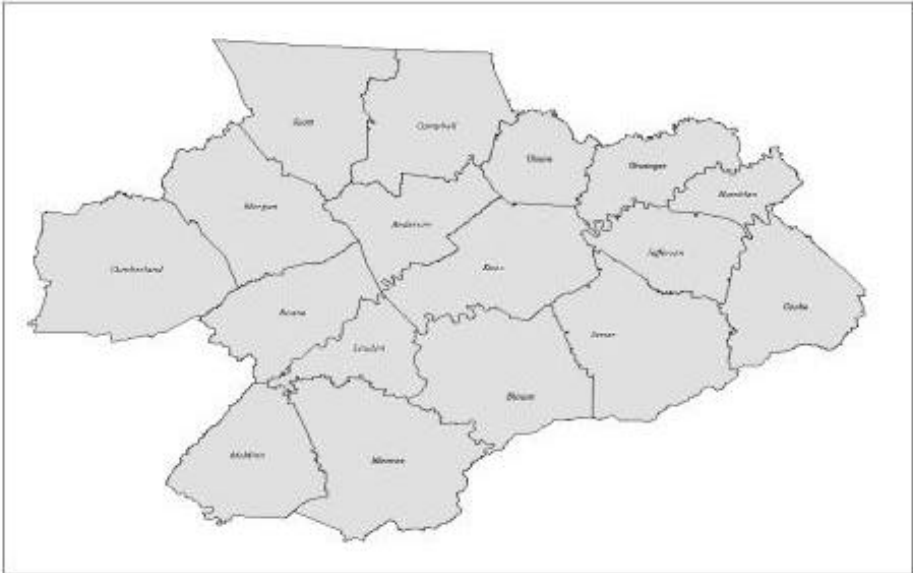
## **F. Conclusion**

As demonstrated, the Applicant is currently providing a signal level of at least - 92 dBm to an estimated population of 858,152 out of a total BTA population of 1,118,107. Therefore, the Applicant is providing adequate service to at least 77% of the population in the licensed service area, well above the 25% five-year buildout requirement established in Section 24.203(b) of the Commission's rules. Accordingly, the Applicant has met the five-year construction requirement.

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Mark Cosgrove  
Director – Systems Engineering  
VoiceStream Wireless Corp. for Powertel

EXHIBIT 2 – Current Covered Population by County

BTA 232 Counties



Market Knoxville, TN (BTA 232)			
County	Covered Pop	County Pop	% Covered
Knox	352,781	382,032	92%
Blount	75,438	105,823	75%
Loudon	35,754	39,088	92%
Jefferson	43,562	44,294	98%
Anderson	62,403	71,330	87%
Sevier	56,370	71,170	79%
Roane	48,761	51,910	94%
Campbell	36,343	39,854	91%
McMinn	40,090	49,015	82%
Hamblen	45,505	58,128	78%
Cocke	25,532	33,565	77%
Morgan	7,931	19,757	40%
Monroe	23,241	38,961	60%
Cumberland	0	46,802	0%
Grainger	0	20,659	0%
Hancock	0	6,736	0%
Scott	0	21,127	0%
Union	0	17,808	0%
Total	358,152	1,118,107	77%
Covered POPs based upon 2000 Census Data			

## EXHIBIT 3 – Adequate Service Coverage Map

### BTA 232 System Coverage

